

PATENT APPLICATION  
Mo-5726  
LeA 32,563

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICATION OF )  
WOLFGANG KAUFHOLD ET AL ) GROUP NO.: 1711  
SERIAL NUMBER: 09/555,921 ) EXAMINER: R. A. SERGENT  
FILED: JUNE 6, 2000 ) RESPONSE TO PAPER NO. 23  
TITLE: METHOD FOR PRODUCING )  
THERMOPLASTIC POLY- )  
URETHANE ELASTOMERS )

**REQUEST FOR REHEARING UNDER 37 C.F.R. §1.197(B)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Sir:

This request is being filed in reply to the Decision on Appeal  
(Appeal No. 2003-1029) mailed July 23, 2003 in the above-captioned matter, and in  
which is set a two (2) month period for reply up to and including  
September 23, 2003.

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AND INTERFERENCES

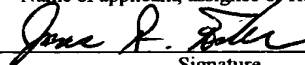
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Commissioner for Patents, Alexandria, VA 22313-1450, on

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Date

James R. Franks, Reg. No. 42,552

Name of applicant, assignee or Registered Representative



Signature

August 14, 2003

Date

## **INTRODUCTION**

In the Decision on Appeal, Appellants note with appreciation that the Board has reversed the Examiner's rejections of Claims 1, 3-5, 7 and 9 under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 3,963,697 (**Ulrich et al**), and under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 5,739,252 (**Kirchmeyer et al**). In the paragraph bridging pages 5 and 6 of the Decision, the Board has stated, "The Examiner has not directed us to evidence that the inventions of either Ulrich or Kirchmeyer meet the claimed temperature requirement." At page 6 of the Decision, the Board has further stated, "Under these circumstance[s], we cannot conclude that the Examiner has met the minimum threshold of establishing inherency under 35 U.S.C. §102."

The Board has affirmed rejections of Claims 1, 3-5, 7 and 9 as being unpatentable under 35 U.S.C. §103(a) as being obvious over the combination of Ulrich et al and United States Patent No. 3,642,964 (**Rausch et al**); and Claims 1, 3-5, 7 and 9 as being unpatentable under 35 U.S.C. §103(a) as obvious over the combination of Kirchmeyer et al and Rausch et al. This Request for Rehearing is filed under 37 C.F.R. §1.197(b) in reply to that Decision.

## **ARGUMENT**

Appellants respectfully submit that the Board, in rendering its Decision, has misapprehended or overlooked the following point, which is particularly set out herein.

Appellants' claimed process involves mixing and reacting the polyisocyanate component (A) and the active hydrogen component (B) in a reactor under conditions such that the residence time of components (A) and (B) within the reactor is no greater than 5 seconds. See line 15 of Appellants' Claim 1, and page 9, lines 14-17 of Appellants' specification.

Appellants respectfully submit that the Board has misapprehended or overlooked the point that Ulrich et al in combination with Rausch et al or Kirchmeyer et al in combination with Rausch et al do not disclose, teach or suggest

the preparation of a thermoplastic polyurethane elastomer with a reactor residence time of no greater than 5 seconds.

Ulrich et al disclose the preparation of polyurethane elastomers in an extruder (abstract, and column 2, lines 53-64). Ulrich et al disclose the residence time of the reactants within the extruder as being 0.8 to 4 minutes (i.e., a minimum extruder residence time of 48 seconds). See column 12, lines 51-56 of Ulrich et al.

Kirchmeyer et al disclose the preparation of thermoplastic polyurethaneurea elastomers by first mixing the isocyanate and active hydrogen reactants in a first static mixer (under conditions such that no reaction occurs between these reactants), and then reacting the mixed reactants in a second static mixer (abstract). The residence time in the first static mixer is disclosed by Kirchmeyer et al as being 0.01 to 5 seconds (column 6, lines 28-35). The residence time in the second static mixer is disclosed by Kirchmeyer et al as being 0.1 to 10 minutes (i.e., a minimum residence time of 6 seconds) (column 6, lines 61-62). As such Kirchmeyer et al disclose a total residence time of at least 6.01 seconds.

Rausch et al disclose a process for preparing thermoplastic polyurethanes in an extruder (abstract). Rausch et al disclose a residence time in the feed zone of the extruder of 1 to 6 seconds (column 6, lines 40-46); and a residence time in the mix zone of the extruder of 6 to 50 seconds (column 7, lines 35-39). The residence time in the extrusion zone of the extruder is disclosed by Rausch et al as not being crucial (column 8, lines 36-39). In the examples, Rausch et al disclose an extrusion zone residence time of 50 seconds (column 11, lines 36, and column 12, line 69). As such, Rausch et al disclose an extruder residence time that is greater than 7 seconds. In the examples, Rausch et al disclose extruder residence times of: 150 seconds (examples 1-3, column 11, lines 29-36, column 12, lines 1-2, and column 12, lines 65-69); and 40 seconds (example 4, column 13, lines 47-49).

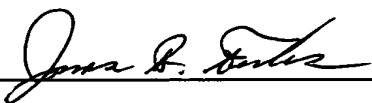
To render a claim obvious, the references must teach or suggest all claim limitations. *SDS USA, Inc. v. Ken Specialties, Incorporated*, 122 F.Supp.2d 533, 543 (D. NJ 2000). The claimed invention must be considered as a whole in deciding the question of obviousness. *Litton Industrial Products Inc. v. Solid State Systems Corp.*, 755 F.2d 158, 164 (Fed. Cir. 1985).

In light of the preceding remarks, it is respectfully submitted that Ulrich et al in combination with Rausch et al or Kirchmeyer et al in combination with Rausch et al do not teach or suggest all of Appellants' claimed limitations. In particular, these references do not teach or suggest the preparation of a thermoplastic polyurethane elastomer by employing a total reactor residence time of no greater than 5 seconds.

### **CONCLUSION**

Appellants respectfully submit that the Board has misapprehended or overlooked the above particularly-stated point in rendering its Decision. In light of the above particularly-stated point, Appellants respectfully contend that the references cited under the obviousness rejections, either alone or in combination, do not suggest or teach all of their claimed limitations, and in particular do not teach or suggest the preparation of a thermoplastic polyurethane elastomer by employing a total reactor residence time of no greater than 5 seconds. Therefore, Appellants respectfully submit that the Board's Decision rejecting the claims as unpatentable under 35 U.S.C §103(a) over Ulrich et al in combination with Rausch et al or Kirchmeyer et al in combination with Rausch et al is in error, and request reconsideration thereof and allowance of Claims 1, 3-5, 7 and 9.

Respectfully submitted,

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